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WHITE PAPER TO GUIDE NET METERING POLICIES NIGERIA

June 2023

Introduction

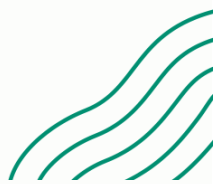
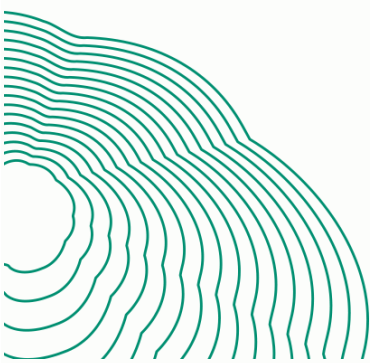
In the pursuit of a sustainable and resilient energy future, the Federal Republic of Nigeria stands at a crucial juncture. As the nation grapples with the challenges posed by climate change, burgeoning energy demand, and the imperative to transition towards cleaner and more sustainable sources, the role of effective policy frameworks cannot be overstated. This white paper aims to provide recommendations for net metering policies in Nigeria for consideration by the esteemed National Council on Climate Change and relevant parliamentary committees.

Nigeria, a nation blessed with abundant solar resources, is confronted with the urgent need to transform its energy landscape. As the global community acknowledges the imperative of transitioning towards renewable energy sources, net metering emerges as a pivotal policy tool capable of fostering decentralized energy generation, reducing carbon emissions, and empowering citizens to actively participate in the national energy agenda.

The National Council on Climate Change and relevant parliamentary committees play a pivotal role in shaping the legislative and regulatory frameworks that underpin the nation's response to climate change and energy transition. This white paper serves as a collaborative effort to contribute evidence-based recommendations, fostering a robust and adaptive policy environment that aligns with Nigeria's commitment to sustainable development and the global imperative of combating climate change.

The provisions in this white paper are divided into four main sections. The first section provides definitions of terms used throughout the policy document, while the second section lays out the procedures and application processes to guide contracting for net metering services. Section 3 explains the rights and obligations of parties involved in net metering arrangements, and the final section provides specific conditions for net metering operations after the contracting phase.



We invite stakeholders, policymakers, and the wider public to engage in a constructive dialogue, working together towards a resilient, sustainable, and equitable energy future for Nigeria.





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1. Definitions

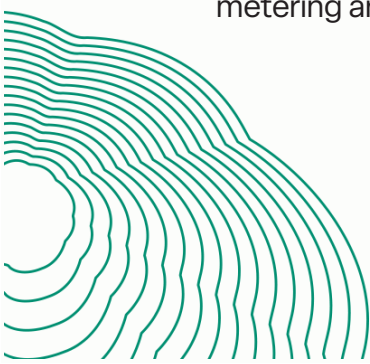
- 1.1 Agreement:** The contract between the distribution company and the distributed generator.
- 1.2 Applicable Documents:** This includes rules and regulations issued periodically by the relevant regulator (or “Authority”), generation, distribution, and transmission licenses, grid and distribution codes, and any other documents, instruments, approvals, directions, or authorizations issued or granted by the authority that have a binding legal effect.
- 1.3 Applicable Tariff:** The rate established by the relevant authority for the specific period and customer group of the distribution company.
- 1.4 Applicant:** A consumer of a distribution company who submits an application to connect their distributed generation facility to the distribution system of the distribution company and requests a license to operate a distributed generation facility as a distributed generator.
- 1.5 Application:** The request made by an applicant to a distribution company for the connection of a distributed generation facility to its distribution system, which also includes the request for the authority to grant a license.
- 1.6 Authority:** This refers to the Nigerian Electricity Regulatory Commission (NERC).
- 1.7 Billing Cycle:** The amount of energy recorded by meters over a thirty-day period.
- 1.8 Distributed Generation Facility:** A facility established by a distributed generator using solar or wind energy resources to produce up to one megawatt of electricity.
- 1.9 Distributed Generation:** The electricity produced by solar or wind power and connected to the distribution network of the distribution company at the interconnection point.
- 1.10 Distributed Generator:** An 11 kV or three-phase 400V consumer belonging to a distribution company (e.g., domestic, commercial, or industrial) who holds the rights and obligations related to the agreement and is granted a license by the authority. The distributed generator is the owner and/or operator of the distributed generation facility.
- 1.11 Distribution System:** The network of facilities used for the distribution of electric power located within the Service Territory, owned or operated by the licensee, including electric lines, circuits, plants, meters, interconnection facilities, and other facilities operating at distribution voltage.
- 1.12 Fault:** An equipment failure, conductor failure, short circuit, or other condition resulting from abnormally high or low current levels in the power system.
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- 1.13 Grid Code:** The technical and business requirements for access, utilization, and operation of the transmission system and transmission facilities, as modified and approved by the Authority.
- 1.14 Interconnection Facilities:** Equipment, including transformers, electrical circuits or lines, switchgear, safety and defense mechanisms, and electrical facilities or meters used for interconnection service.
- 1.15 Interconnection Point:** The location where metering is installed, linking the distributed generator's installation and protection equipment to either the distribution system or the distribution company.
- 1.16 kWh:** Kilowatt-hour.
- 1.17 MW:** Megawatt.
- 1.18 Net Energy Billing:** A billing and metering practice where a distributed generator is billed based on net energy over the billing cycle.
- 1.19 Net Energy:** The balance, positive or negative, between the kWh generated by the distributed generator and the kWh supplied by the distribution company after the billing cycle.
- 1.20 Net Metering Facility:** A facility with one or two meters for measuring the kWh produced by a distributed generator and supplied by the distribution company to calculate net energy.
- 1.21 Registrar:** A person designated by the authority to register and record communications, applications, and petitions submitted to the authority and to carry out additional responsibilities delegated by the authority.
- 1.22 Tariff:** The rates, charges, terms, and conditions for the sale of electric power to consumers approved by the authority and duly notified by the Federal Government.



2. Application Procedure and Licensing for Connecting Distributed Generation Facilities

- 2.1** Any entity meeting the criteria for a distributed generator is eligible to apply to a distribution company. The distribution company must respond to the applicant's request for information and authorized documents within 10 working days.
- 2.2** Intending Distributed Generators must submit a request to the distribution company along with all required paperwork.
- 2.3** The distribution company must acknowledge receipt of an application within five business days and inform the applicant if it is complete in all material respects. If any information or documents are missing, the applicant must provide them within seven working days of receiving notification.
- 2.4** The distribution company shall conduct an initial review to determine if the applicant qualifies for the interconnection facility. The initial review must be completed within twenty working days.
- 2.5** If the proposed facility is found to be technically unfeasible, the distribution company must return the application and explain its rejection to the applicant within three working days of the initial review's conclusion.
- 2.6** If the distribution company determines that the applicant meets the requirements to be a distributed generator, the distribution company and the applicant must agree within ten working days. The distribution company must send a copy of the agreement to the authority within seven working days of its signing.
- 2.7** Following the execution of the agreement, the distribution company must provide the applicant with a connection charge estimate for the proposed interconnection facility within seven working days.
- 2.8** Within twenty days of the estimate's issuance, the applicant must pay the connection charge.
- 2.9** After the applicant pays the demand notice, the distribution company must install and commission the proposed interconnection facility within thirty days, starting the net metering arrangement.

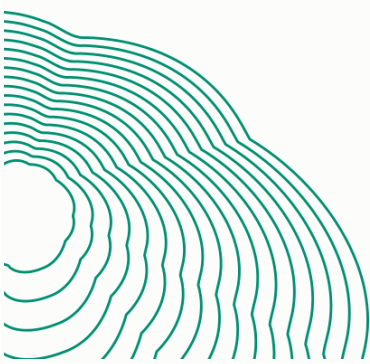


- 2.10** Any customer agreeing with the distribution company under a net metering arrangement qualifies for the grant of a distributed generator license.
- 2.11** The distribution company must submit the following items to the authority with the application for a grant of license:
- 2.11.1** Agreement.
 - 2.11.2** Application for an exemption from other laws.
 - 2.11.3** Evidence of the payment of applicable fees.
 - 2.11.4** Distributed Generator Affidavit.
- 2.12** Upon receiving the application and the documents, the authority may grant the applicant a license.

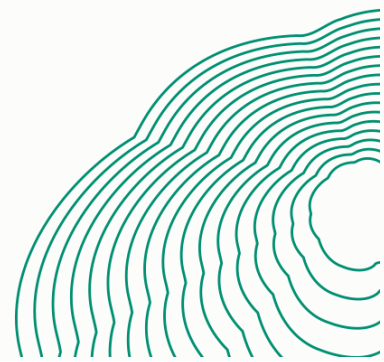


3. Distribution Company's General Powers, Rights, and Obligations

- 3.1** Permit any of its customers to set up distributed generation facilities that can be connected to its distribution system using either (a) a conventional meter that can track the flow of electricity in both directions or (b) two different meters, one used to sell electricity to the distribution company and the other to buy electricity from the distribution company.
- 3.2** Enter into a contract with the distributed generator and approve the interconnection.
- 3.3** Have the right to review the design of a distributed generation facility and interconnection facilities before the facility begins operating in parallel with its distribution system, demanding modifications required by regulations.
- 3.4** The operation of a distributed generation facility may be restricted or disconnected by the distribution company if there is a fault, with or without warning.
- 3.5** The distribution company may restrict the operation of a distributed generation facility or demand disconnection for regular maintenance, repairs, non-compliance with regulations, or upon the expiration of the agreement, provided thirty days' written notice is given.
- 3.6** A distributed generator must operate and maintain its interconnection facilities and distributed generation facility under safe electrical procedures.
- 3.7** The distributed generator cannot use the interconnection facilities of the distribution company to sell electricity to any third party.
- 3.8** The agreement between the distributed generator and distribution company shall be in effect for three years from the commissioning of the distributed generator facility.
- 3.9** The agreement may be automatically renewed after the initial term expires for successive terms of three years upon mutual understanding between the distributed generator and the distribution company.
- 3.10** The distributed generator may decide to stop selling electricity to the distribution company by giving thirty days written notice, terminating the agreement.
- 3.11** The distribution company may not terminate the agreement without the authority's prior approval. Upon termination, accrued rights and obligations will remain in effect.



- 3.12** Before the commissioning of interconnection facilities, protection and control diagrams for the interconnection of the distributed generator shall comply with the grid and distribution codes and be approved by the distribution company.
- 3.13** The installation of equipment for interconnection is the responsibility of the distributed generator. If it is unable to install the required equipment, the distribution company may carry out the necessary work upon agreement or payment by the distributed generator.
- 3.14** Protective functions must be equipped to prevent automatic reconnection of the distributed generation facility with the distribution company's facilities.
- 3.15** Stable service voltage and frequency must be agreed upon by the distribution company and the distributed generator.
- 3.16** A manual disconnect device with a visual break must be installed by the distributed generator to separate the distributed generation facility from the distribution facilities.
- 3.17** Grid-connected inverters and generators must adhere to applicable international standards.
- 3.18** The distributed generator must not run machinery that interferes with the distribution company's operations, customer service, or communication infrastructure.
- 3.19** In case of interference, the distribution company shall notify the distributed generator and provide an opportunity to take corrective action.
- 3.20** The nominal voltage and frequency may vary by 5% and 1%, respectively.
- 3.21** The distributed generator is responsible for expenses related to interconnection facilities up to the interconnection point, including the installation of meters.
- 3.22** The distributed generator is liable for reasonable expenses incurred by the distribution company for the provision, operation, or upkeep of interconnection facilities and distribution system upgrades necessary solely for the interconnection of the distributed generation facility.



4. Provisions for Net Metering Services

- 4.1** Net metering equipment installed must accurately measure electricity flow in both directions. The net energy metering facility must comply with all safety and protection standards authorized by the authority.
- 4.2** The distribution company shall net off the kWh supplied by the distributed generator against the kWh supplied by it at the end of each billing cycle. Meter readings must be completed as directed by the authority.
- 4.3** If the distribution company supplies more kWh than the distributed generator, the distributed generator will be charged for the excess kWh according to the applicable tariff.
- 4.4** Excess energy supplied by the distributed generator may be credited for future consumption or paid by the distribution company on a quarterly basis, subject to specific conditions.
- 4.5** The distribution company is responsible for paying only the off-peak rate and relevant consumer category charges, excluding fixed fees, fuel price changes, or duties or levies.
- 4.6** The distributed generator and the distribution company must abide by all directions, instructions, and guidelines issued by the authority.
- 4.7** The authority has the right to demand information from the distributed generator and/or distribution company.
- 4.8** Any dispute arising from net metering shall be brought before the authority for decision.
- 4.9** Failure to comply with the orders issued by the authority regarding net metering may result in a penalty.

